NOVEMBER/DECEMBER 2024

23UFEL14 — FUNDAMENTALS OF ELECTRONICS

Time : Three hours Maximum : 75 marks

SHANMUGA INDUSTRIES ARTS & SCIENCE COLLEGE LIBRARY

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. What is meant by electric potential?
2. Define electric intensity.
3. What is meant by variable resistor?
4. Differentiate resistance values with colour coding.
5. What is meant by fixed inductor
6. Define Lenz's law.
7. What is a capacitor?
8. Define dielectric constant.
9. What is a conductor?
10. What is a diode?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Determine the relation between electric potential and intensity.

Or

(b) Determine the potential due to a uniform charged conducting sphere at a point outside the conductor.

12. (a) Elaborate the construction and characteristics of resistors.

Or

(b) Illustrate the testing method of resistance.

13. (a) Evaluate self and mutual inductance.

Or

(b) Derive Faraday's law of electromagnetic induction.

14. (a) Discuss in detail the energy stored in a charged capacitor.

Or

(b) Illustrate the working of capacitors in parallel connection.

15. (a) Explain the functions of conductors and insulators.

Or

(b) Discuss in detail diode and transistors.

SHANMUGA INDUSTRIES ARTS & SCIENCE COLLEGE LIBRARY

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Derive the expression for Coulomb's Law.

17. Explain series and parallel connection of resistors.

18. Determine the energy stored in an inductor.

19. Illustrate the working of plastic and electrolytic capacitor.

20. Elaborate intrinsic and extrinsic semiconductors.

———————